



BMH Med. J. 2023;10(2):42-46. **Case Report**

Renal Osteodystrophy and Dental Manifestation: A Case Report

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Abstract

Renal Osteodystrophy is a common complication of chronic renal disease and is the part of a broad spectrum of disorders of mineral metabolism. The most frequent causes of chronic renal disease are diabetes mellitus, arterial hypertension and glomerulonephritis. Chronic renal disease is classified in 5 stages - from kidney damage with normal or increased GFR to renal failure [1]. An increasing number of patients with this disease will probably demand dental treatment, and that up to 90% of them will show oral signs and symptoms related to this systemic disease [2]. Such patients may present greater bleeding tendency, hypertension, anemia, drug intolerance, increased susceptibility to infections and the presence of several oral manifestations. Here we present a case report of renal osteodystrophy with significant oral findings.

Keywords: renal osteodystrophy, oral manifestations, chronic renal disease

Case report

A middle aged lady reported to the department of oral medicine and radiology with a chief complaint of swelling in relation to upper front tooth region since 2 months (**Figure 1, 2**). The medical history was remarkable with a history of renal failure and undergoing dialysis for the same and is under medication since 6 months. Patient was poorly built and nourished with un-coordinated gait. Extra oral examination revealed bilateral hyperpigmentation on the face, diffuse swelling on the right side of the face, local rise in the temperature, palpable and tender lymph nodes of size 1cm in relation to the right and left submandibular region.

Intra oral examination of hard tissue (**Figures 2,3**) revealed multiple missing teeth and generalized Grade I mobility. Intra oral soft tissue examination revealed focal melanin pigmentation on the palate, tongue, and buccal mucosa. Proliferative growth of size 3x2 cm in diameter extending from the lingual aspects of 13-17 was observed proximally with respect to 15 and on labial aspects of 14 and 13. Erythematous lesions with no bleeding spots were also seen. Poor oral hygiene status with calculus ++++. Proliferated growth seen on edentulous space of 47 of size 1x1 cm in diameter and

also with lingual aspect of 35-45.



Figure 1



Figure 2



Figure 3

On palpation, lesion was found to be firm and hard in consistency which was non-reducible, non-compressible and non blanching. Provisional diagnosis of Irritation fibroma with respect to 13-17, and 14-13 was made. IOPA with respect to 13 and 14 and OPG was advised. OPG reveals generalized interdental bone loss and decreased bone density.



Figure 4

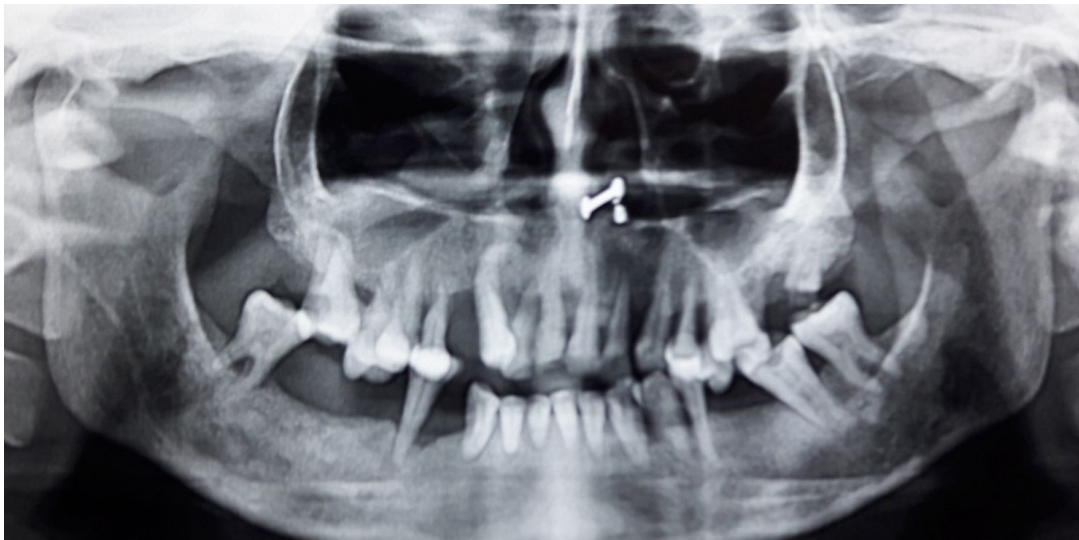


Figure 5

IOPA with respect to 13 and 14 revealed loss of lamina dura, horizontal and angular bone loss with decreased bone density.

Final diagnosis of Renal Osteodystrophy was given based on clinical and radiographic findings. Treatment plan of surgical evaluation was planned. Patient was informed about all the findings.

Discussion

Chronic renal disease (CRD) is a multifactorial syndrome characterized by progressive and irreversible loss of renal mass and function, representing a major health concern. Diabetes mellitus, hypertension, chronic glomerulonephritis, and systemic lupus erythematosus are the most common causes of this disorder [3].

ROD can generate a wide range of oral facial and dental manifestations, such as gingival hyperplasia, periodontal disease, xerostomia, lichen planus, uremic stomatitis, candidiasis, herpes simplex, delayed dental eruption, enamel hypoplasia, dental mobility and ROD [2]. ROD is a multifactorial and complex entity that includes not only the response of bone in CRD but also its response to different therapies. It is an osseous alteration believed to arise from increased parathyroid function associated with inappropriate calcium, phosphorus and vitamin D metabolism [4].

Severe xerostomia is a common finding with a prevalence of 73.2%. If CRF begins early in life enamel hypoplasia may develop which is due to disturbances in calcium and phosphate metabolism. In developing dentition red brown discoloration, delayed or altered eruption may be seen. Tooth mobility and drifting lead to malocclusion. Impaired calcium and phosphorus balance can cause narrowing of pulp chamber and increase the incidence of dental calculus. In some patients marked jaw enlargement is present. Most of the clinical manifestations were present in our case leading to the diagnosis of oral manifestations of ROD [2].

Diagnosis of the specific osteodystrophy type is a rather complex process and various biochemical markers and radiographic findings are used so as to facilitate this stage.

Dental treatment strategy should emphasize oral hygiene and patients should be reinforced frequently in hygiene performance. Symptomatic treatment should include oral antibiotics to prevent the future bacterial endocarditis and oral antifungals should be prescribed to prevent secondary candidal infection [1,2,4].

Conclusion

Patients have to be treated considering all issues correlated to the kidney dysfunction and inserted in a strict follow-up program until transplantation. Early detection of oral pathologies and strong preventive measures can minimize the need for extensive dental care. Involvement of the patient is central to increase the motivation for oral health [5,6].

References

1. Proctor R, Kumar N, Stein A, Moles D, Porter S. Oral and dental aspects of chronic renal failure. *J Dent Res.* 2005;84:199-208.
2. J P, Nisha V A, Gs A, Ca P, Mm V. Oral manifestations in a renal osteodystrophy patient - a case report with review of literature. *J Clin Diagn Res.* 2014;8(8):ZD28-30.
3. S. C. Palmer, M. Ruospo, G. Wong et al. Oral-D study investigators. Dental health and mortality in people with end-stage kidney disease treated with hemodialysis: a multi-national cohort study. *American Journal of Kidney Diseases.* 2015; 66:666-676.
4. Kalyvas D, Tosios KI, Leventis MD, et al. Localized Jaw enlargement in renal osteodystrophy. Report of a case and review of the literature. *J of Oral Surg Oral. Med Oral Pathol Oral radiol Endod.* 2004;97:68-74.
5. Cervero, Alba & Bagan Jose & Jimenez, Yolanda & Poveda Roda, Rafael. (2008). Dental management in renal failure: Patients on dialysis. *Medicina oral, patologia oral y cirugia bucal.* 13. E419-26.
6. Silvia Marti Alamo, Carmen Gavalda Esteve, M Gracia Sarrion Perez . Dental considerations for the patient with renal disease. *J Clin Exp Dent.* 2011;3(2):e112-9.